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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,424	08/28/2003	Megan A. Fannon	107044-0031	7242

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CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210

EXAMINER

ECHELMEYER, ALIX ELIZABETH

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/650,424

Applicant(s)

FANNON ET AL.

Examiner

Alix Elizabeth Echelmeyer

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed January 3, 2007. Claims 1, 6 and 14 have been amended. Claims 15-20 are cancelled. Claim 5 is withdrawn from a previous election requirement. Claims 1-4 and 6-14 are pending and are rejected finally for the reasons given below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montminy et al. (US Pre-Grant Publication 2004/0211668) in view of Fuglevand et al. (US Patent 6,030,718).

Montminy et al. teach the fabrication of a membrane electrode assembly including an anode, polymer electrolyte membrane (PEM), cathode, and flow field plates that can also serve as current collectors integrated by injection molding using a thermoplastic elastomer ([0091]-[0094]). In one embodiment, the material can be injected directly to a space within the flow field plates, but Montminy et al. also teach the use of mold plates as seen in Figure 2.

Regarding the catalyst coating and diffusion layer, it should be known to one having ordinary skill in the art that these components are inherent to a fuel cell and that it would be obvious to one having ordinary skill in the art to apply the layer to either of the components it would be touching in order to achieve the desired fuel cell structure.

As for claim 8, Montminy et al. also teach the use of welding to connect components ([0096]).

Montminy et al. fail to teach leads on the current collectors and the hot pressing step of claim 11.

Fuglevand et al. teach current collector plates having conductive members that extend beyond the outer frame of the plate. These conductive members are received in the outer wall of the fuel cell container for easier conduction of electrical energy generate by the fuel cell. Fuglevand et al. further teach the coating of a diffusion layer on the current collector plate for maintaining electrical contact (Figure 18; column 20 lines 39-67; column 21 lines 1-41). Fuglevand et al. further teach a hot pressing step prior to sealing the components of the fuel cell (column 17 lines 65-67; column 18 lines 1-6).

It would be advantageous to use the leads taught by Fuglevand et al. on the current collector plates of Montminy et al., as well as the diffusion layer of Fuglevand et al., in order to facilitate the conduction of the electricity produced by the fuel cell.

In this case, the current collector with leads is interpreted to be a lead frame with integrated current collector since the integrated part is a structure designed for giving support to the rest of the components of the fuel cell.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the current collector with leads as taught by Fuglevand et al. as well as the diffusion layer as the current collector of Montminy et al. in order to make the conduction of electricity produced by the stack more efficient.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Montminy et al. in view of Fuglevand et al. as applied to claim 7 above, and further in view of Roche et al. (US Patent Number 5,097,104).

The teachings of Montminy et al. and Fuglevand et al. as discussed above are incorporated herein.

Montminy et al. in view of Fuglevand et al. fail to teach trimming excess material from the lead frame after forming the membrane electrode assembly.

Roche et al. teach the trimming of excess material from the current collector after the pressing operation to seal the components of the fuel cell. Trimming excess material is necessary in order to remove excess material (column 8 lines 16-38).

It would be desirable to trim excess material from the lead frame of Montminy et al. in view of Fuglevand et al. in order to remove excess material.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to trim excess material from the lead frame in order to remove unneeded material.

Response to Arguments

5. Applicants arguments filed January 3, 2007 have been fully considered but they are not persuasive.

Applicants give two arguments:

- I. That Montminy et al. does not teach inducing compression in the components of a fuel cell.
- II. That Fuglevand et al. teach away from the instant invention.

The examiner disagrees.

Concerning the first argument, Montminy et al. do, in fact, teach inducing compression in the fuel cell. Since the seals of Montminy et al. are compressed (see [0093]), the parts of the fuel cell are inherently compressed.

As for the second argument, the teaching of Fuglevand et al. that is relied upon in the rejection is not related to the method of holding the frame in compression, but rather the leads on the current collector plates, which are used to give support to the rest of the components of the fuel cell. Since this teaching and not the teachings about screws are taken from Fuglevand et al., Applicants argument that Fuglevand et al. teaches away from the claimed invention does not apply in this case.

In the Office Action dated August 31, 2006, and above, the examiner stated: "regarding the catalyst coating and diffusion layer, it should be known to one having ordinary skill in the art that these components are inherent to a fuel cell and that it would be obvious to one having ordinary skill in the art to apply the layer to either of the components it would be touching in order to achieve the desired fuel cell structure."

Since Applicants did not traverse the examiner's noticed fact, the noticed fact is taken to be admitted prior art. MPEP 2144.03

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's trainer, Susy N. Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745

aee


SUSYTSANG-FOSTER
PRIMARY EXAMINER